

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A method of detecting oligomerization of G protein coupled receptors comprising:
 - a) transfecting a cell with a polynucleotide encoding a first G protein-coupled receptor fusion protein containing a fluorescence acceptor and a polynucleotide encoding a second G protein-coupled receptor fusion protein containing a fluorescence donor;
 - b) exciting the fluorescence donor at a particular wavelength;
 - c) detecting fluorescence emission of the acceptor (FRET), such that if this emission is greater than the emission detected in control cells expressing only the acceptor, oligomerization of the G protein coupled receptors has been detected.
2. (previously presented) The method of claim 1, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are homologous.
3. (previously presented) The method of claim 1, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are heterologous.
4. (original) The method of claim 1, wherein the fluorescence donor is cyan fluorescent protein and the fluorescence acceptor is yellow fluorescent protein.
5. (previously presented) The method of claim 1, wherein the polynucleotide encoding the first G protein coupled receptor encodes a truncated G protein coupled receptor.

6. (previously presented) A method of determining whether a receptor agonist activates G protein coupled receptors by enhancing oligomerization or activates G protein coupled receptors by disrupting oligomerization comprising:

a) transfecting a cell with a polynucleotide encoding a first G protein-coupled receptor fusion protein containing a fluorescence acceptor and a polynucleotide encoding a second G protein-coupled receptor fusion protein containing a fluorescence donor;

- b) contacting the cell with an agonist;
- c) exciting the fluorescence donor at a particular wavelength;
- d) detecting fluorescence resonance energy transfer (FRET), such that if the efficiency of FRET detected is greater in the cells contacted with the agonist than the efficiency of FRET detected in cells prior to the addition of the agonist, receptor activation has occurred by enhancing oligomerization and if the efficiency of FRET detected is less in the cells contacted with the agonist than the efficiency of FRET detected in cells prior to the addition of the agonist, receptor activation has occurred by disrupting oligomerization.

7. (previously presented) The method of claim 6, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are homologous.

8. (previously presented) The method of claim 6, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are heterologous.

9. (original) The method of claim 6, wherein the fluorescence donor is cyan fluorescent protein and the fluorescence acceptor is yellow fluorescent protein.

10. (previously presented) The method of claim 6, wherein the polynucleotide encoding the first G protein coupled receptor encodes a truncated G protein coupled receptor.

11. (previously presented) A method of screening for an agonist of the interaction between G protein coupled receptors comprising:
- a) transfecting a cell with a polynucleotide encoding a first G protein-coupled receptor fusion protein containing a fluorescence acceptor and a polynucleotide encoding a second G protein-coupled receptor fusion protein containing a fluorescence donor;
 - b) contacting the cell with a test compound;
 - c) exciting the fluorescence donor at a particular wavelength;
 - d) detecting fluorescence resonance energy transfer (FRET), such that if the efficiency of FRET detected is greater in cells contacted with the compound than the efficiency of FRET detected in cells prior to the addition of the test compound, the test compound is an agonist of the interaction between G protein coupled receptors.
12. (previously presented) The method of claim 11, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are homologous.
13. (previously presented) The method of claim 11, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are heterologous.
14. (original) The method of claim 11, wherein the fluorescence donor is cyan fluorescent protein and the fluorescence acceptor is yellow fluorescent protein.
15. (previously presented) The method of claim 11, wherein the polynucleotide encoding the first G protein coupled receptor encodes a truncated G protein coupled receptor.
16. (previously presented) A method of screening for an antagonist of the interaction between G protein coupled receptors comprising:

a) transfecting a cell with a polynucleotide encoding a first G protein-coupled receptor fusion protein containing a fluorescence acceptor and a polynucleotide encoding a second G protein-coupled receptor fusion protein containing a fluorescence donor;

- b) contacting the cell with a test compound;
- c) exciting the fluorescence donor at a particular wavelength;
- d) detecting fluorescence resonance energy transfer (FRET), such that if the efficiency of FRET detected is less than the efficiency of FRET detected in cells prior to the addition of the test compound, the test compound is an antagonist of the interaction between G protein coupled receptors.

17. (previously presented) The method of claim 16, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are homologous.

18. (previously presented) The method of claim 16, wherein the polynucleotide encoding the first G protein coupled receptor fusion protein and the polynucleotide encoding the second G protein coupled receptor fusion protein are heterologous.

19. (original) The method of claim 16, wherein the fluorescence donor is cyan fluorescent protein and the fluorescence acceptor is yellow fluorescent protein.

20. (previously presented) The method of claim 16, wherein the polynucleotide encoding the first G protein coupled receptor encodes a truncated G protein coupled receptor.

21. (withdrawn) A G protein coupled receptor fusion protein, comprising a fluorescence donor.

22. (withdrawn) The G protein coupled receptor of claim 21, wherein the fusion protein does not contain the C-terminal regulatory domain.

23. (withdrawn) The G protein coupled receptor of claim 21, wherein the fluorescence donor is cyan fluorescent protein.
24. (withdrawn) The G protein coupled receptor of claim 21, wherein the fluorescence donor is yellow fluorescent protein.
25. (withdrawn) The G protein coupled receptor of claim 22, wherein the fluorescence donor is cyan fluorescent protein.
26. (withdrawn) The G protein coupled receptor of claim 22, wherein the fluorescence donor is yellow fluorescent protein.
27. (previously presented) The method of claim 1, wherein the polynucleotide encoding the second G protein coupled receptor encodes a truncated G protein coupled receptor.
28. (previously presented) The method of claim 6, wherein the polynucleotide encoding the second G protein coupled receptor encodes a truncated G protein coupled receptor.
29. (previously presented) The method of claim 11, wherein the polynucleotide encoding the second G protein coupled receptor encodes a truncated G protein coupled receptor.
30. (previously presented) The method of claim 16, wherein the polynucleotide encoding the second G protein coupled receptor encodes a truncated G protein coupled receptor.